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# United States Department of Agriculture,

OFFICE OF THE SECRETARY.—Circular No. 33.

## THE MISSION OF COOPERATIVE DEMONSTRATION WORK IN THE SOUTH.<sup>a</sup>

It is always a pleasure to talk to a body of farmers, but it is doubly a pleasure to talk to the men who are so congenial and have so much at heart the lines of work that are going to accomplish so much. We have tried to think out the plans of the Demonstration Work thoughtfully and lay them along lines of practical utility; to form a substantial basis of evolution or revolution for changing the conditions of the common people, especially among our rural population. I see that you have caught the spirit of it and are endeavoring to carry out the plans under the conditions under which you labor.

There is no question in my mind but that the farmers of this country must have their lands tiled when close competition with the whole world has come and life is more strenuous than it is to-day. Tile drainage is the cure for a whole lot of difficulties. If you are well tiled, too much rain doesn't trouble you. I have watched successfully tiled fields; the farmer after a heavy rain could go right on the next morning and work them, while the farmer that was not tiled might be obliged to wait a week. Tile drainage is a perfect remedy for the washing of all the hills of the South, and the only perfect remedy. I have tiled hills so steep that a man could hardly go up and down, and never had a washing. Tiling will act as an air duct as well as a water duct, and in forcing the water down to the tile it makes little pores all through the soil, draws the water, passes the water off, and answers for airing the soil; and if you tile 30 inches deep it is equivalent almost to 30 inches of plowing. The greatest farm I know of in the world is in the Hawaiian Islands and it is plowed 30 inches. Get some man in your respective territories who can afford it to demonstrate the great value of tile drainage.

Also, take another proposition—that farming can not be successfully carried on in any country without live stock. I have noted how the nations, as the lands have advanced in price, have changed from tillage crops to grass crops. When I was a boy, three-fourths of England was under tillage. To-day less than one-fourth is under tillage, and the population has multiplied many fold. The same is true of Holland. It is almost entirely a grass country and lands are worth on an average \$500 per acre. The same is true of Denmark. If it has been the experience of these

<sup>a</sup> An extempore address delivered by Dr. Seaman A. Knapp, of the Bureau of Plant Industry, to the agents of the Farmers' Cooperative Demonstration Work, Macon, Ga., September 16, 1910.

nations that as land advanced and life became more strenuous they turned toward grass, it seems that the same will follow in our case. In other words, they made up their minds that they could get more out of land from grass and live stock than they could by cultivating it. They only use the cultivated crop as a means of rotation, but the main crop is the grass crop. What are they doing with their grass crops? In Holland and Denmark it is the dairy problem, and they have been able to develop a cow that is almost a perfect machine for manufacturing those fine hays and fine pasture grasses into high-priced butter and cheese. Take their registered stock and those animals will average to produce for the farmer 1,000 per cent net profit more than the ordinary cow; that is tenfold.

Mark you, speaking of the better thing: It takes about 19 pounds of clover a day to sustain a 1,000-pound animal. No profit; simply a case of keeping the machinery running and at the end of a year you have simply sustained life. Your profit lies in getting that animal to eat some more. If it can eat and digest 20 pounds you make a profit on 1 pound. The 19 pounds is waste to run the machinery. Now, the animal that can consume and digest and assimilate 21 pounds is worth twice as much as the animal that can consume 20, because with the animal that consumes 20 pounds you make a profit on 1 pound and with the animal that consumes 21 pounds you make a profit on 2 pounds, and so it goes on in proportion. If you get the animal to consume 29 pounds it is worth ten times as much as the animal that consumes only 19 pounds. Profit lies in the best. This is true in every way; whether in the case of a horse, or a cow, or a citizen, the profit is in the best.

Then comes this great grass crop, and we don't know how to make grasses and we don't know how to make hay. Hay is baked to death. Animals eat grass because it tastes good. If you will cure your hays, your pea vines, your alfalfa, and even your wild grasses, if cut at the proper time and cured so as not to be sun baked, which takes away the flavor, you will have a great product and will have to feed very little grain. A mule isn't apt to overeat with grain. We must use more intelligence in feeding a horse. Keeping stock in the future must be more of a problem of pasture and hay than of grain. Grain is too strong as a main food and too expensive. It fevers the system, and therefore we must have grasses and luscious pastures—well drained, not old sour grass, but an abundant pasturage, sweet and nutritive, so that it is a pie counter to the animal. We must do more intelligent farming.

Modern farming is going to require more power on the farm. The time when a man could get a living with the hoe has passed. Labor has become too scarce and too high priced and the demand of living now is of too high a grade. Every step in upward human progress costs something. If it's a better road, it costs. If it's a better school, a better living, or better clothing, it is going to cost more money. Let us relegate the hoe to the past and take something in its place that can accomplish more work in a day. It means, furthermore, that no State can get along with one mule to two laborers. We must add more horse power or more mule power; more power on the farm, more brains, and fewer men. As labor advances—and I hope it will advance, because its advance means better living for the common

man—then we will simply substitute power and will profit by it. That is the problem that has been worked out in the mechanical world. All we paid a good carpenter when I was a boy was 75 cents a day and an extra carpenter \$1 a day. To-day the same class of man will claim from \$4 to \$6 a day. He does more work. When I was a boy we sawed from the rough board with a handsaw all the planks and planed them with a jack plane. To-day that is all done by machinery and all the carpenter does is to fit and nail up, and we can afford to pay a higher price. He can do more work in a day. Where we worked 1 acre two years ago we want to be able to work 3 acres this year and by and by want to be able to work 10 acres where we worked 1 acre a few years ago. Why is it that the Northwest, with its lower range of crop values per acre, prospers? If the farmers there get from \$10 to \$15 or \$20 an acre out of their high-priced land, they think they have done very well. Why are they richer than you men, who can get \$75 to \$100 out of an acre of cotton? It is because one man works an enormously greater number of acres. It isn't what you get per acre, but the aggregate values that you can get out of the acres you till.

They do everything by machinery and they use from four to eight times the horsepower and a great deal larger horses, and they don't want even a walking plow, because the man who walks will get tired in the afternoon and want to stop and he won't do as much by 33 per cent as if you let him ride, and he won't work as many rows. We must accomplish a great amount of plowing in a day. The harrow must become universal, and the disk plow and the smoothing harrow, and by and by the gasoline engine will come in and we will do three to four times what we now do. I have a friend in the great rice fields that plows and disks and harrows and seeds 20 acres in a day himself. That is getting along. This can't be done at all times, because this heavy machinery packs the land too much unless the land is in just the right condition, but I am simply speaking of the trend of things. Mr. Collier stated that he had but one horse in the county fit for breeding purposes. This was true in all the great Northwest a few years ago. Now it is full of good horses. In Virginia they have had a drought and are willing to sell their horses cheaper than they would a few years ago, particularly on the eastern slope of the Alleghenies. Some horse dealers have lowered their prices for first-class horses nearly 50 per cent. Suppose you were to start out to get a first-class cow, such a cow as will produce 1,000 pounds of butter in a year, how many such cows could you get? You can find but a few in the United States. And you may take the whole animal kingdom, even up to men, and you will find only a small per cent first class. We want to change these things and it is your problem to help change them, beginning with the lower orders, but ultimately to change the men so that greatness shall be common among the common people of our country. How are you going to do it? The old system of education was to educate the top.

In old days they thought if a few men held all the money it was a good thing and the masses should remain poor, but they changed their plan. Certainly within my recollection it was believed in this country and in other countries that the common people should not be educated at public expense and that common schools should not be

universal. This has changed, but it has not yet percolated through the brain of lots of people that prosperity must be universal. We must teach that doctrine—a universal prosperity based on intelligent agriculture and thrift, so that the average man is able to be a great man and an independent man, and on that hangs not only our prosperity, but our national existence and our liberties. It is on the thrift, prosperity, and independence of the average man that our citizenship is based. Now, where must we start? In thinking out this problem the main point is to start at the bottom. In attempting to raise the condition of the colored man we frequently start too high up and in talking of the higher progress talk right over his head. When I talk to a negro citizen I never talk about the better civilization, but about a better chicken, a better pig, a whitewashed house. Of the 150 negro schools, seminaries, colleges, etc., in the South three years ago very few were carrying out fully, to my mind, their proper mission. Many of them were trying to teach Latin and Greek, which would be of very little use to most of them. I know of a colored section where there were 6,000 colored people settled during the war and a school was started in 1864. They have been carrying on that school and it is costing \$26,000 a year. The managers of the school came to me year before last and said: "The condition of those people is worse than it was when we took hold of it. Go down there and see what the matter is." I found they were teaching every child that knew anything at all to get away from that country. They were not influencing the people on the farm or helping them at all. They were cultivating their lands with little steers that weighed about 500 pounds. Their sole income was from cotton, and I have it from the cotton ginners that the average income of each family in that section was only \$30 a year. I went to the gentleman that held the purse strings and told him what the difficulty was. I said: "You are doing a great wrong. Why don't you get at the people themselves and teach them something practical?" In fact, we were all wrong about it. Until we took hold of the Demonstration Work the idea was prevalent that a man on the farm did not need any teaching. Now we realize that the problems which are up to-day and need solution should be presented to him; and it is just as much the part of our obligation in our great system of education to establish lines of study for the man on the farm as for the boy that is developing to be the future lawyer, the future doctor, or the future preacher. It is also realized that the great force that readjusts the world originates in the home. Home conditions will ultimately mold the man's life.

I once knew a Chinaman who came to the United States. He spent ten years in being educated, graduated at Yale with honor and appeared to be entirely changed in his civilization. He went back to China, married a Chinese wife, and reverted to the original Chinese type. The home eventually controls the viewpoint of a man; and you may do all that you are a mind to in schools, but unless you reach in and get hold of that home and change its conditions you are nullifying the uplift of the school. We are reaching for the home, and I want to tell you how we propose to get hold of that home. We started with the average man by teaching deeper plowing and better preparation of the soil. The plant must have moisture. If there is

too much moisture the food is thin. Then comes a dry spell and it doesn't get enough to eat because there isn't moisture enough, and so we have one-third and one-fourth and one-sixteenth of a crop when a full crop is right down there if you will only use these instructions. Humus will hold 181 per cent of moisture; common sand will hold 25 per cent and dries right up. You want to hold the moisture so the plant can feed right along regularly. And the great cry of the land is more humus and deeper plowing, so that it will hold more moisture. In the proper seed bed the root will be cooler than the top. Shallow cultivation is simply to leave that home of the roots undisturbed. It also keeps up a dust mulch. With a good seed bed, proper cultivation of the soil, the best seed, and the best methods of shallow cultivation, you have made the crop. These will give wealth to the people, and they mean an advance perhaps of four or five or six hundred million or a billion of money to the South. Then, too, our boys' corn-club work dovetails right in with our general plan of the uplift of the home. If the home lacks culture and the boy fails to get the right training, there is a weak spot in his character that no future teaching can help very much.

The matter of paramount importance in the world is the readjustment of the home. It is the greatest problem with which we have to deal, because it is the most delicate and most difficult of all problems. We want to reach the home through the boys and the teaching of agriculture. What is agriculture? There is not very much book lore in it. I have defined it in this way: There is about one-eighth of it that is science; about three-eighths that is art, and there's about one-half of it that's business. The teacher can't teach business and can't very well teach art, and yet the greatest problem on the farm is how to do the work rapidly enough to make a living profit. Teachers may teach agriculture in a certain way and to a certain extent, but the main object of the teacher should be to interest the pupil in the study of agriculture. Thus we have devised these boys' corn clubs so that the boys may become interested in doing things. The club does more than that. It teaches him to do one thing and to do it well. It is going to take all the force that we can get to accomplish this work, and it is a question of political economy to find how we are going to get the funds, and it will be necessary to call to our help all the forces for the betterment of men and to cooperate with them. One of the living forces in the world is the teacher, and what I said about teaching agriculture doesn't apply to other things. I regard the teacher as next to the mother as a force in the land. But I am not going to concede that the teachers can do everything. Get the teacher to organize the club and work the machinery. We simply help the teacher. If the teacher is a woman, show her the general principles and explain to her; any woman in the country could be trained in twenty-four hours how to conduct boys' corn clubs. The teachers don't understand what they are expected to teach; they think they must go through a course in agriculture. Limit the work to just a few things and do them well is the practical plan. As Americans we spread too much. In the supervision of the field plats the teacher can't be all about. You agents can, and you should cooperate with the teacher and have a perfect understanding of the principles of a good crop of corn. Show the teacher

how to organize, and have her do it. Your value lies not in what you can do but in what you can get the other person to do. Consequently you want that teacher to become an enthusiast; then go with that teacher out to the field and criticise that corn in the presence of the teacher, the child, and the parent, and pretty soon that teacher will be a local force for you. It's your business to teach the teacher as well as the people. In that way pretty soon we will have a goodly band of teachers that will teach some real agriculture.

Don't make another mistake. Don't classify little boys as men. Group boys with boys.

I believe in making a boy a manly boy. I believe in his attending the public schools, because one of the great things for a man is to know how to struggle with men and stand up for his own opinions and carry his own points. In other words, life is a battle and the man who hasn't met his equals and overcome them when he was a boy is a weakling all his life. I have seen namby-pamby boys, tied to their mother's apron strings and taught Latin and Greek, sent out into the world. Poor little puny things! Why, I would rather take a street boy that can knock his way through the crowd; I would rather risk him in the battle of life than that namby-pamby boy. We don't let our boys and girls learn how to manage. Let the boy do, even if he makes mistakes. There is great need of farm managers to-day, but men have not been trained to manage the business side of a farm. There is need of captains of industry in every community. You can't make them through books. Power of the brain depends on the hardness of the muscle. Softening of the brain is the result of softening of the muscle. Teach the boys how to regulate their forces, how to meet shocks, and have supreme courage to face the world anywhere. Having learned to be a farmer, he should know machinery. The costliest animal in the world is a man or a woman. They cost in treasure, cost in care, cost in human anxiety. Yet we shorten human life by neglect. The average age or span of life and a possible one are wide apart. My ideal of education is that of practical sense, leadership. Get that sense into a boy and he will take up farming, and if he knows a few fundamental principles he will apply the rest. Teach him the importance of knowing a few things well, of system and thrift. Education really means a leading out; we make it a stuffing in. Try to teach the child to lay by his knowledge on a certain shelf in the brain ready for use. Not one person in a thousand has put his thoughts or facts in a definite brain niche, so that when he wants that knowledge he can reach out and take that knowledge and use it. Farmers must be orderly. Farms are simply an outward indication of what kind of brains the farmer has. There is no such thing as poor land. It is the poor brain of a thoughtless man on top of the supposedly poor soil. No matter how poor the land appears, it can be made profitable if the farmer knows how and has the will power to carry it out. Try this system of education that makes men as well as farmers.

Reverting to the colony that was in such poor condition, the first lesson I gave them was to raise corn and make molasses, because a negro if he has corn and molasses can live, and you must make him an independent liver before you can make him a good citizen. So we taught them to make molasses and grow corn. It took with them



and stuck. Like the old lady that thanked the Lord for everything. She had a large family and they all died; she thanked the Lord and said they were probably better off in that world than in this. She had a large property, which was lost, and she thanked the Lord, because she said it would probably have ruined them to have so much wealth. She had a fine set of teeth and lost the most of them; she thanked the Lord that she had two, and they hit. The molasses mill hit. I had some letters just the other day telling in glowing terms of the success of this practical work to those people. Get down to where people can understand, touch the bottom, and lift.

You might think the object of our work is to increase a farmer's income, to teach him to double his crop; but if you stop there and think that is the sole object of our work you have not seen the whole there is in it. There is a higher mission than that in connection with the Demonstration Work. We begin with the increase of the crop because that is the basis for all possible future prosperity. The farmer must be made independent. You must keep a man's nose away from the grindstone, for if it is constantly at the grindstone he can't see anything else, can't be elevated; and so we take up the question in the South of corn and cotton. We try to teach the farmer greater thrift, to raise his own provisions, to can his vegetables, so that he may have them the year round; that he must put this money into a better home, and so percolating and drifting through his home there will be a broadening element and there will be a gradual uplift of conditions, and as there is an uplift and improvement of conditions the men themselves will become a little broader and a little straighter and a little firmer, till by and by this home society where he must live, this rural society, will be a great dominating force in the land, and we shall become a pattern, not only to our own country, but to all countries, showing how a great and free people were able to readjust their conditions.

I believe that when the common people come to their own they will be able to hold their own. Every man should be so stalwart that he is a model of defense and defiance to the world. Our project would have been sufficiently ambitious if we had said: "We will increase the wealth and give the people greater earning power." But other things that we teach incidentally are that we must improve the moral tone, the moral condition, and the whole prosperity of the people, to try to turn all avenues of the wealth that we create into the proper channels so as to create a better people. But even this is not quite enough. We may have wealth and social prosperity and home comforts and not be a high-minded, stalwart, courageous, and brave people. We must teach that. We have nearly 500 agents traveling in the United States. Take this same high standard and begin at the bottom to teach things that will be helpful to the people. We go out and help people, and especially help the man on the farm. The moment you begin to help a man you begin to get his confidence. You begin to prove up and pretty soon he becomes a disciple and he preaches to another man, and so the doctrine spreads.

I want you to feel to-day that you have hold of one of the greatest lines of social uplift and development and greatness that exist. You may have conceived that something else was greater; that if you could use a facile pen like Washington Irving or some of the great

writers of the age that would be the acme of your ambition; or you may have thought that if you were able to speak with the wonderful expression of Demosthenes, or Burke, or Henry, that would be the summit of your hopes. But you are beginning at the bottom to influence the masses of mankind, and ultimately those masses always control the destinies of a country. If you allow their practices to sink lower and lower the country must ultimately drop to a lower level in its moral, political, and religious tone, and we go down to degradation and infamy as a nation; but if we begin at the bottom and plant human action upon the rock of high principles, with right cultivation of the soil, right living for the common people, and comforts everywhere, and make wealth and prosperity all through the rural districts, the people will lend their support and all civilization will rise higher and higher, and we shall climb to the summit of human excellence and become a beacon light to all nations of the world. I do not glory in the wealth of a few, but rejoice in the general distribution of wealth and prosperity for the common people.

It will require a great deal of stern, earnest effort when you are out alone on your way. It is going to require a good deal of patience, but demonstration will do it. If you prove up on your own farm and on your neighbors' farms they will accept it. They can't resist facts. Another thing, don't publish what you are going to do. Simply tell what you have done. Achieve all you can. Always let your county know it. Call attention to the crop and everything helpful. And so we will march along under divine guidance and gradually we will change the whole condition. These Southern States rightfully should be the richest States in the land. They have the greatest crop-producing power. They control the clothing of the world almost absolutely. We have been raising cotton and selling it and buying everything else. That practice never made a people rich. If we will produce everything that we consume, our own butter, cheese, poultry, as well as horses, and let our cotton be a cash crop, we will own the factories, we will own the banks, we will be a factor in the policy of the country and in the control of the world.

S. A. KNAPP,  
*Special Agent in Charge of  
 Farmers' Cooperative Demonstration Work.*

Approved:  
 JAMES WILSON,  
*Secretary of Agriculture.*

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